REMARKS

This is in response to the Office Action mailed on March 29, 2004. Claims 1-28 were pending in the application and the Examiner rejected all claims. With this amendment, claims 1, 19 and 27 are amended, claims 29-32 are added and the remaining claims are unchanged in the application.

On page one of the Office Action, the Examiner objected to the disclosure stating that the title and serial number were missing on page one of related applications. We respectfully direct the Examiner's attention to the Priority claim and Preliminary Amendment filed on April 3, 2001 providing this informaiton.

Also, on page two of the Office Action, the Examiner objected to claims 1 and 4-28 as containing the abbreviation "CFG". Independent claims 1, 19 and 27 have been amended to set out antecedent basis for the acronym. Therefore, it is believed that the claims are now in proper form.

On pages 2-14 of the Office Action, the Examiner rejected claims 1-5 and 7-28 under 35 U.S.C. §103(a) as being unpatentable over Hunt et al. U.S. Patent No. 6,374,226 (the Hunt patent) in view of Koontz U.S. Patent No. 6,535,886 (the Koontz patent). Of these claims, claims 1, 16, 19, 27 and 28 are independent claims. Applicant respectfully traverses the Examiner's rejection.

The Hunt patent is directed to a fundamentally different type of system than the present invention. The Hunt patent does not teach or suggest any method or system by which one or more applications can interface with multiple speech recognition engines. Further, Hunt et al. does not teach any type of independent, operable component between an application and a speech recognition engine. Instead, Hunt simply teaches the conventional, prior art system in which an application program interfaces directly with a speech recognizer.

From the disclosure in Hunt, it is clear that components 10 and modules 15 are all part of an application program. Specifically, Hunt teaches that components 10 are graphical user interface components (such as buttons). Hunt et al. also specifically teaches that modules 15 each correspond to one of the user interface components 10. Each module 15 controls its corresponding user interface component 10 when the component 10 is to be controlled by speech, rather than by another mechanism, such as a keyboard or a mouse input. Therefore, components 10 and modules 15 are all part of a single control application for controlling a user interface. See, for example, column 6, line 16-column 7, line 14.

This is specifically discussed at column 7, lines 31-37 where Hunt et al. states "Several advantages of the disclosed system are illustrated by this embodiment. First, because each action associated with a rule is performed in response to specific spoken input, and because <u>in a well-designed application</u> <u>that action is performed by the speech controller module</u> <u>associated with a particular program component on which the</u> <u>action is identified</u>, and because that speech controller module includes the code to perform the action, there is localization of the actions performed in response to spoken input." (emphasis added).

It is thus clear that components 10 and modules 15 form nothing more than an application for controlling a user interface. That application directly communicates with speech recognizer 30. This is of course supported by FIGS. 1, 2, 3 and the related text.

Therefore, the Hunt patent teaches nothing more than a prior art system discussed in the background of the present application in which an application must directly interface with a speech recognizer and must thus accommodate the specific needs of each different speech recognizer. Hence, if the speech

recognizer were to be changed or the application were to be used with a different speech recognizer, this would require cumbersome modifications which results in an error prone system.

The Hunt patent specifically does <u>not</u> teach or suggest any type of system by which an application can utilize multiple different speech recognition engines. Therefore, there is no need in Hunt et al. for teaching an engine-independent interface operable with applications. There being no need for such a teaching, Hunt simply fails to teach or suggest this feature.

By contrast, independent claim 1 specifically includes "implementing an engine-independent SR interface between the CFG engine and a speech recognition (SR) engine; communicating words in the first grammar to the SR engine through the SR interface; notifying the SR engine, through the SR interface, of rules in the first grammar; and representing the rules in the first grammar to the SR engine through the SR interface". Since the Hunt patent does not teach or suggest an engine-independent SR interface, it cannot teach or suggest any of these steps of claim 1.

Also, the Koontz patent does not remedy this deficiency. In fact, the Koontz patent only mentions speech recognition in passing. The only speech recognition system set out in Koontz is system 125, shown in FIG. 1. Instead, the Koontz patent is directed to a translation system which translates a textual input from one language into another language. By the time any input is provided to the translation system 200 of the Koontz patent, that input is already in the form of text (see, for example, input text 202 in FIG. 2A). All the description regarding the body of system 200 in FIG. 2A assumes that the input (even if it was in the form of speech) is already recognized and in textual form. All system 200 does is translate that textual input from one language into another.

The compiler 240 shown in FIG. 2A does not have anything to do with a speech recognizer. Therefore, the Koontz patent does not teach or suggest any type of interface between an application and a speech recognition engine, of any kind, much less one which deploys an engine-independent interface.

Applicant thus submits that independent claim 1 is allowable over the references cited by the Examiner.

Claim 16 specifically includes "receiving the result from the SR engine at a context-free grammar (CFG) engine having an interface component exposing methods to implement an engine-independent interface to the SR engine and an application-independent interface to an application…". Not only do the two references cited by the Examiner fail to disclose an engine-independent interface to a speech recognition engine, they also specifically fail to disclose an application-independent interface. As discussed with respect to claim 1, the Hunt patent teaches only a single application interfacing with only a single speech recognizer. Similarly, Koontz does not teach or suggest any type of interface between a CFG engine and multiple applications. Therefore, there is no teaching, whatsoever, of an application-independent interface. Applicant thus submits that independent claim 16 is allowable over the references cited by the Examiner.

Independent claim 19 is specifically drawn to a middleware component configured for operation between an application and a speech recognition engine. Independent claim 19 specifically includes the CFG engine, and "an interface component coupled to the CFG engine, exposing methods to provide an application-independent interface to the application 'and an engine-independent interface to the SR engine." Thus, for the same reasons as claim 16, Applicant submits that independent claim 19 is allowable over the references cited by the Examiner as well.

Independent claim 27 is directed to a computer readable medium that causes a computer to perform substantially the same method as that set out in claim 1. Therefore, for the same reasons that independent claim 1 is allowed, Applicant submits that independent claim 27 is allowable over the references cited by the Examiner as well.

Independent claim 28 is directed to a computer readable medium that causes the computer to perform a method substantially the same as that set out in independent claim 16. Therefore, for the same reasons as independent claim 16, Applicant submits that independent claim 28 is allowable over the references cited by the Examiner as well.

Applicant also submits new claims 29-32 with the present amendment. These claims are directed to the CFG engine managing multiple grammars.

One advantage of one embodiment of the present invention is that the CFG engine manages multiple grammars and represents those multiple grammars to the SR engine as a single grammar. This alleviates some of the grammar management burden on the SR engine so that it can dedicate more of its resources to performing its primary task, speech recognition.

Independent claim 29 is directed to a speech processing component that includes "a layer configured to implement an application interface for communication with an application and a speech recognition (SR) interface for communication with a SR engine, the layer including a context-free grammar (CFG) engine configured to represent a plurality of grammars to the SR engine, through the SR interface, as a single grammar." Similarly, independent claim 31 sets out a method that includes "providing a program component configured to communicate with an application through an application interface and with a speech recognition (SR) engine through an SR interface, the program component including a context-free grammar (CFG) engine; and representing

to the SR engine, with the CFG engine through the SR interface, a plurality of grammars as a single grammar." Neither of the references cited by the Examiner teach or suggest this feature. This feature is similar to the subject matter set out in some of the dependent claims originally submitted with this application. For instance, dependent claim 13 states "representing the first and additional grammars to the SR engine, through the SR interface, as a single grammar". Similarly, claim 21 includes that the CFG engine is configured to "represent the plurality of different grammars to the SR engine, through the interface component, as a single grammar." This same subject matter can be found in additional dependent claims as well. In rejection of those claims, the Examiner again cited Hunt and Koontz. However, those references simply do not teach or suggest representing multiple grammars to an SR engine as a single grammar.

In fact, the primary reference relied on by the Examiner (the Hunt patent) specifically teaches the opposite. Hunt specifically states that each program component 10 has a corresponding module 15, and each module 15 represents a grammar. All of the modules 15 communicate with SR engine 30, and SR engine 30 is specifically disclosed as loading multiple individual grammars. See column 5, lines 40-54 and column 7 lines 11-19. See also FIG. 1 which shows that multiple modules 15 communicate with speech recognizer 30 and FIG. 3 which shows that speech recognizer 78 must load multiple individual grammars (grammar A and grammar B). By contrast, as set out in independent claims 29 and 31, the present invention provides the CFG engine which represents the plurality of grammars to the SR engine as a single grammar. Thus, Applicant submits that independent claims 29 and 31 are allowable over the references cited by the Examiner.

Dependent claims 2-15, 17-18, 20-26, 30 and 32 depend either directly or ultimately from the independent claims.

Therefore, Applicant submits that the dependent claims are allowable as well. Applicant therefore requests reconsideration and allowance of claims 1-32.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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